FREEMAN, CRAFT, MCGREGOR GROUP

Volume Test Summary Results

County of Los Angeles
VSAP Version 2.0
Ballot Marking Device
Version 1.0
Voting System

California SOS Contract
#18S52064

Prepared for the California
Secretary of State
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The Volume Test is intended to simulate conditions approximating the normal use by voters in a polling place on Election Day and verify that the equipment will operate reliably under those conditions. Twenty-five temporary employees were hired as test voters. They cast decks containing between 100 and 115 sheet ballots on 50 Ballot Marking Device (BMD) units. Two of the units were fed an additional 150 pre-marked ballots to test the capacity of the ballot boxes. Members of the Freeman, Craft McGregor Group observed the voting and documented any anomalies the voters encountered while operating the machines.

Twenty-nine of the 50 units (58%) experienced incidents that were logged.   Test voters encountered 56 incidents, including ballot jams, one ballot printed over two cards and three machines with frozen screens, for a total of 172 anomalous conditions that were documented on incident logs. The data obtained from these incident logs are presented in Attachment A.

The most significant findings are as follows:

Overall, there were 52 paper jams. Four distinct types of paper jams were observed. The first occurred when a voter inserted the ballot into the BMD but pulled it back or did not continue to push the ballot before it loaded into the unit. This is sometimes referred to as a "timid jam" in the incident logs. This results in a false paper jam. The second occurs when a ballot is slightly skewed when the voter attempts to insert their ballot. When this occurs, the ballot gets caught in the printer and is damaged. In order to proceed with voting, the voter must contact an election worker to open the printer cover and the ballot box, clear the jam and replace the damaged ballot. The third jam results from the ballot getting caught in the printer fingers. If this happens after the voter has pressed the cast ballot selection, the ballot removed from the print head is blank and the voter has to re-vote their ballot. Even when this error occurs earlier in the process, the voter needs to summon an election worked to clear the jam and replace the damaged ballot. The fourth jam is caused by ballots not falling cleanly into the

ballot box and hanging just outside of the printer roller. As these ballots accumulate, they begin to interfere with other ballots exiting the printer/scanner head and prevent them from exiting the mechanism and falling cleanly into the box. This results in a paper jam. The ballot box must be opened in order to proceed with voting, but clearing the jam results in the BMD sensors not recognizing the ballot. As a result, the number of ballots in the ballot box does not match the number of ballots recorded on the closing report at the end of the voting session.

There was a total of 5,373 ballots cast during the test. Since there were 52 jams, the mis-feed rate for this test was 0.97%. Thirty-two (61.5%) of the jams resulted in having to restart the voting session. In addition, 23 (44.2%) of these jams damaged the ballot either when the jam occurred or when the ballot was removed and the jam cleared.

In three cases, the BMD became unresponsive to any input and had to be restarted via a forced power cycle. Each of these cases happened during the ballot printing phase of voting. Initially, the ballot stalled for approximately 23 seconds in the printing operation, then was ejected without being printed. The ballot was fed back into the BMD and the attempted printing operation took 57 seconds, then the ballot was ejected again. After the second or third attempt to print, the BMD screen went to all white and the BMD did not recover, respond to any touch input, or poll worker code input to the scanner. The BMD had to be restarted by holding the power button in for more than 10 seconds to cause a forced power off, then the BMD was restarted normally and was able to resume normal operation.

Two of the BMDs were fed an additional 150 ballots, after the initial 100, to test the 250 ballot maximum capacity of the ballot box. During this portion of the test, one of the BMDs experienced 3 ballot box jams.

When a ballot box jam occurs when the ballot is being cast, that ballot is not included in the cast ballot count. As such, there were 253 ballots in the ballot

box before the BMD stopped accepting ballots and indicated that the ballot box was full and needed to be emptied. The close poll report indicated that only 250 ballots were cast.